

What is claimed:

1. A process for the treatment of organic waste comprising the steps of:
 - (a) feeding organic waste to a biological reactor and subjecting said organic waste to biological digestion so as to convert at least a portion of said organic waste to a clear decant and a mixture of biosolids and unconverted organic material;
 - (b) contacting a least a portion of said mixture of biosolids and unconverted organic material with at least one oxidizing agent in a chemical treatment unit;
 - (c) monitoring the oxidation-reduction potential of said at least a portion of said mixture of biosolids and unconverted organic material in said chemical treatment unit and adjusting the concentration of said at least one oxidizing agent in contact with said at least a portion of said mixture to maintain said oxidation-reduction potential of said at least a portion of said mixture at greater than 0 mV so as to convert said at least a portion of said mixture to a conditioned effluent; and
 - (d) returning said conditioned effluent to said biological reactor.
2. The process of claim 1 wherein said (c) comprises maintaining said oxidation reduction potential at about +200 mV or greater.
3. The process of claim 1 wherein said (b) includes contacting said at least a portion of said mixture of biosolids and unconverted organic material with oxygen in such a manner as to raise the oxidation reduction potential of said at least a first portion of said mixture to +0 mV or greater, then contacting said at least a portion of said mixture with at least one second oxidizing agent so as to raise said oxidation reduction potential to about +200 mV or greater.
4. The process of claim 3 wherein said at least one second oxidizing agent comprises a combination of oxidizing agents.

5. The process of claim 1 wherein said at least one oxidizing agent comprises an oxidizing agent generated by electrolysis.

6. The process of claim 5 wherein at said oxidizing agent generated by electrolysis is generated by subjecting at least a portion of said at least a portion of said mixture of biosolids and unconverted organic material to electrolysis.

7. The process of claim 1 wherein said (c) is performed at temperatures of about 120° C to about 300° C and pressures of about 2 atm to about 10 atm.

8. The process of claim 1 wherein said (c) comprises maintaining said oxidation reduction potential at about +500 mV or greater.

9. The process of claim 8 wherein said (c) is performed at pressures of about 1 atm and temperatures at about the atmospheric boiling point of said at least a portion of said mixture of biosolids and unconverted organic materials or less.

10. The process of claim 1 further comprising returning at least a second portion of said mixture of biosolids and unconverted organic material to said biological reactor in such quantities as to control the system net growth rate within a selected range of values of about 0.05 day⁻¹ and less.

11. The process of claim 10 wherein said selected range of values is between about 0.01 day⁻¹ and about 0.006 day⁻¹.

12. The process of claim 1 further comprising reducing the particle sizes of the biosolids in said at least a first portion of said mixture of biosolids and unconverted organic material prior to performing said (b).

13. The process of claim 1 wherein said (b) is performed by cavitation of said at least a portion of said mixture of biosolids and unconverted organic material.

14. The process of claim 1 comprising adding enzymes to said organic waste during said (a) to stimulate cellular respiration and to suppress cell yield.

15. The process of claim 1 comprising adding mature cells to said organic waste during said (a) to suppress cell yield.

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